

CLAIMS

1. An electronic timepiece comprises:
 - a power source voltage generating unit that converts external energy to electric energy to generate a power source voltage lower than
 - 5 a predetermined operating voltage;
 - an oscillation signal output unit that outputs a predetermined oscillation signal by application of the power source voltage generated by the power source voltage generating unit;
 - 10 a boosting unit that boosts the power source voltage generated by the power source voltage generating unit up to at least the predetermined operating voltage; and
 - 15 a timing unit that times by application of the predetermined operating voltage based upon an oscillation signal outputted by the oscillation signal output unit.
- 20 2. The electronic timepiece according to claim 1, further comprising a boosting control unit that controls the boosting unit to boost the power source voltage only for a predetermined time based upon the predetermined oscillation signal.
- 25 3. The electronic timepiece according to claim 2, further comprising
 - a frequency-dividing unit that frequency-divides an oscillation signal outputted by the oscillation signal output unit; and
 - 25 a boosting-stop-instruction-signal output unit that outputs a

boosting stop instruction signal for instructing stop of the boosting behavior performed by the boosting unit based upon a frequency-dividing signal outputted from the frequency-dividing unit when the predetermined time elapses after the oscillation signal output

5 unit outputs the oscillation signal, wherein the boosting control unit stops boosting based upon a boosting stop instruction signal outputted by the boosting-stop-instruction-signal output unit.

10 4. The electronic timepiece according to claim 2, further comprising a boosting-stop-instruction-signal output unit that outputs a boosting stop instruction signal for instructing stop of the boosting behavior performed by the boosting unit when the predetermined time elapses after the oscillation signal output unit starts, wherein

15 boosting is stopped based upon a boosting stop instruction signal outputted by the boosting-stop-instruction-signal output unit.

5. The electronic timepiece according to claim 2, further comprising

20 a time information input unit that inputs time information representing one of a plurality of the predetermined times whose time intervals are different from one another;

25 a time information storage unit that stores the time information inputted by the time information input unit;

a time information extracting unit that extracts the time information stored in the time information storage unit by application of a power source voltage generated from the power source voltage generating unit thereto; and

5 a boosting stop instruction signal producing unit that generates a boosting stop instruction signal for instructing stop of the boosting behavior performed by the boosting unit based upon the time information extracted by the time information extracting unit, when a predetermined time indicated by the time information extracted elapses,

10 wherein

 boosting is stopped based upon the boosting stop instruction signal generated by the boosting stop instruction signal producing unit.

6. The electronic timepiece according to claim 1, further

15 comprises:

 a power source voltage detecting unit that detects whether the power source voltage has been boosted up to the predetermined operating voltage by the boosting unit; and

 a boosting control unit that controls the boosting unit and boosts

20 the power source voltage based upon the predetermined oscillation signal and the detection result detected by the power source voltage detecting unit.

7. The electronic timepiece according to claim 6, wherein the

25 boosting control unit controls the boosting behavior performed by the

boosting unit based upon the oscillation signal and the detection result detected by the power source voltage detecting unit, when a predetermined time elapses after the oscillation signal output unit outputs the oscillation signal.

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8. The electronic timepiece according any one of claims 1 to 7, wherein the oscillation signal output units comprises an oscillating circuit that oscillates when the starting voltage is applied to the oscillating circuit,

10 a resonating circuit that resonates according to a signal outputted from the oscillating circuit; and

a constant current circuit that feeds a constant current;

an oscillation inverter that is supplied with a constant current from the constant current circuit to reverse and amplify a signal

15 outputted from the resonating circuit to output the oscillation signal.

9. The electronic timepiece according to claim 8, wherein the timing unit is provided with a logic circuit constituted of a plurality of field effect transistors, and

20 the oscillation inverter is constituted of a field effect transistor having a threshold voltage lower than that of the field effect transistor included in the timing unit.

10. The electronic timepiece according to claim 8, wherein the timing unit is provided with a logic circuit constituted of a plurality of

field effect transistors, and

a waveform shaping unit that is constituted of a field effect transistor having a threshold voltage lower than that of the field effect transistor included in the timing unit and that shapes a waveform of an oscillation signal outputted from the oscillation signal output unit to output the same to the timing unit.

11. The electronic timepiece according to claim 8, wherein the timing unit is provided with a logic circuit constituted of a plurality of field effect transistors, and

the boosting control unit is constituted of a field effect transistor having a threshold voltage lower than that of the field effect transistor included in the timing unit.

15 12. The electronic timepiece according to claim 8, further comprising a bias circuit that is constituted of a field effect transistor having the same threshold as that of the oscillating circuit and that applies a predetermined bias voltage to the oscillation inverter.

20 13. The electronic timepiece according to claim 8, further comprising

a waveform shaping unit that shapes a waveform of an oscillation signal outputted from the oscillation signal output unit to output the same to the timing unit, and

25 a bias circuit that is constituted of a field effect transistor having

the same threshold as that of the waveform shaping unit and that applies a predetermined bias voltage to the waveform shaping unit.

14. An electronic device that is activated by application of a
5 predetermined operating voltage based upon a predetermined
oscillation signal, comprising:

a power source voltage generating unit that converts external energy to electric energy to generate a power source voltage lower than a predetermined operating voltage;

10 an oscillation signal output unit that outputs the predetermined oscillation signal by a power source voltage generated by the power source voltage generating unit; and

15 a boosting unit that boosts the power source voltage generated by the power source voltage generating unit up to at least the predetermined operating voltage.

15. An actuation method for actuating an electronic device that is activated by application of a predetermined operating voltage based upon a predetermined oscillation signal, comprising:

20 converting external energy to electric energy and generating a power source voltage lower than a predetermined operating voltage;
outputting the predetermined oscillation signal by a power source voltage generated in the generating; and
boosting up the power source voltage generated in the
25 generating to at least the predetermined operating voltage.